## National Transportation Safety Board FACTUAL REPERT AVIATION

NTSB ID: FTW02LA177

Aircraft Registration Number: N999DW

Occurrence Date: 06/08/2002

Most Critical Injury: None

Occurrence Type: Accident

Investigated By: NTSB

Location/Time

Airport Proximity: Off Airport/Airstrip	Distance From	m Landing Facility:		Direction Fro	m Airport:
Nederland	со	80466	1030	MDT	
Nearest City/Place	State	Zip Code	Local Time	Time Zone	

Aircraft Information Summary

Aircraft Manufacturer	Model/Series	Type of Aircraft
Bell	47G-3B-1	Helicopter

Sightseeing Flight: No Air Medical Transport Flight: No

## Narrative

Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:

On June 8, 2002, at 1030 mountain daylight time, Bell 47G-3B-1 helicopter, N999DW, was substantially damaged when it encountered turbulence while in cruise flight near Nederland, Colorado. The helicopter was registered to and operated by the pilot. The private pilot, sole occupant of the helicopter, was not injured. Visual meteorological conditions prevailed, and a flight plan was not filed for the 14 Code of Federal Regulations Part 91 personal flight. The local flight originated from the pilot's private staging area in Nederland at 0900.

According to the pilot, he obtained weather from a television station in Denver, Colorado. The weather forecast called for winds from the southwest at 30 mph, with gusts up to 40 mph. The flight departed, flew approximately 1.5 hours, and was in cruise flight at 9,000 feet (700 feet agl) with a 20-25 knot headwind experiencing light turbulence, when the flight encountered "severe turbulence." The pilot stated that the helicopter went "up and down violently for period of 2-3 seconds." The tailrotor driveshaft was severed by the main rotor, and the helicopter then experienced "a right yaw that full application of left pedal would not correct." The pilot stated that during the event the engine and rotor rpm increased past their upper limits. He was able to bring the engine and rotor rpm within limits and regained control of the helicopter. Subsequently, the pilot performed an autorotation to sloping terrain without further incident. The pilot examined the helicopter and reported that the tailrotor drive shaft was separated, the tailboom was damaged, and one main rotor blade was damaged.

According to a witness, who was fishing on a lake 4 miles from the accident site, he observed water spouts between 2 and 8 feet tall and high swirling winds near the time of the accident. The witness further stated that "in 26 years of backpacking to high lakes I had never seen this happen."

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AVIATION Occurre					rence Type: Accident								
Landing Facility/Approach In	formation	•						•					
Airport Name			Airport	ID:	Airport Eleva	tion	Run	way Used	Runwa	y Lengt	h [	Runwa	y Width
N/A					Ft.	MSL							
Runway Surface Type: Unknown													
Runway Surface Condition: Unknown	own												
Type Instrument Approach: Unknown													
VFR Approach/Landing: Forced Landing													
Aircraft Information													
Aircraft Manufacturer Bell				/lodel/9 47G-3						Serial I 6604	Number	•	
Airworthiness Certificate(s): Normal													
Landing Gear Type: Skid													
Homebuilt Aircraft? No	Number of Seats: 3	3	Ce	Certified Max Gross Wt.				2950 LBS Number			er of Engines: 1		
= - 11				Engine Manufacturer: Model/Series: Lycoming TVO-435-D1B						Rated Power: 270 HP			
- Aircraft Inspection Information													
Type of Last Inspection			Date o	Date of Last Inspection Time S			Time Si	Since Last Inspection				e Total	l Time
Annual			07/20	07/2001			75.6 Hours				4123 Hours		
- Emergency Locator Transmitter (	ELT) Information												
ELT Installed? Yes	ELT Operate	ed? No	)	ELT Aided in Locating Accident Site? No									
Owner/Operator Information													
Registered Aircraft Owner			St	Street Address 7500 Magnolia Drive									
Bernard P. Gateau			Cit	City							State		Zip Code
			Nederland CO Street Address								81	0466	
Operator of Aircraft			Same as Reg'd Aircraft Owner										
Same as Reg'd Aircraft Owner			City	City						State	) Z	Zip Code	
Operator Does Business As: N/A	·				0	perator Desig	nator Co	de:					
- Type of U.S. Certificate(s) Held: 1	Vone												
Air Carrier Operating Certificate(s)	:												
Operating Certificate:					Operator C	Certific	ate:						
Regulation Flight Conducted Unde	r: Part 91: Genera	al Aviat	tion										
Type of Flight Operation Conducted	d: Personal												
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AVIATI		Occurrence Type: Accident											
First Pilot Information													
Name					City					State	Date	of Birth	Age
On File					On File	ile On File On File					File	58	
Sex: M Seat Occupied	: Left	Prir	ncipal Profes	sion: Unkno	own				Certifi	cate Nun	nber: (	On File	
Certificate(s): Priva	ate												
Airplane Rating(s): Single-engine Land													
Rotorcraft/Glider/LTA: Helicopter													
Instrument Rating(s): Airpl	lane												
Instructor Rating(s): None													
Type Rating/Endorsement for	or Accident/In	ncident Aircra	ft?			С	urrent Bi	ennial F	ight Rev	riew? 07	/2001		
Medical Cert.: Class 3	Medica	al Cert. Status	s: Valid Med	dicalw/ wa	aivers/lin	n.		Date	of Last	Medical	Exam:	12/2000	
- Flight Time Matrix  All A/C  This Make and Model			Airplane Single Engine	Airplane Mult-Engine	Night		I Actual	nstrument Si	mulated	Rotorcraft		Glider	Lighter Than Air
Total Time	553	74	383			47	;	33	50		167	2	
Pilot In Command(PIC)	417	74	265			39	;	31	42		144		
Instructor											_		
Last 90 Days	21	21									21		
Last 30 Days Last 24 Hours	10	10				-					10		
Seatbelt Used? Yes		ılder Harness	Used? Yes		Т	oxico	logy Per	ormed?	No		- 1	d Pilot?	
- Coalbon Cood. 100	01100	ilaci Hairicoo	103						110				
Flight Plan/Itinerary													
Type of Flight Plan Filed: No	one												
Departure Point						State	A	irport Id	entifier	Dep	arture	Time	Time Zone
Nederland					C	co	١	NONE		0900	0900		MDT
Destination					,	State	Д	irport Id	entifier				
Local Flight													
Type of Clearance: Unkno	own												
Type of Airspace: Class G													
Weather Information													
Source of Briefing:  TV/Radio Weather													
Method of Briefing: TV/Ra	dio												
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	Occurrence	Occurrence Type: Accident										
Weather Information												
WOF ID	Observation Time	Time Zone	WOF Elevati	on	WOF Di	stance From	n Accid	dent Site		Direction From Acci	dent Site	
			_									
			Ft.	MSL				NM	Deg. Mag.			
Sky/Lowes	st Cloud Condition: Clea	r				Ft. AG	iL	Condition o				
Lowest Ce	eiling: None		Ft.	AGL	Visibi	lity:		SM	Alti	"Hg		
Temperatu	ure: 18 °C	Dew Point:	°C	Wind	Direction:	200			De	nsity Altitude:	Ft.	
Wind Spee	ed: 20	Gusts: 25		Weath	ner Condti	ions at Accid	dent Si	ite: Visual C	Cond	itions		
Visibility (F	RVR): Ft.	Visibility (R	VV)	SM	Intensity	of Precipita	ation:					
Restriction	ns to Visibility: None											
Type of Pr	ecipitation: None											
Accident	Information											
Aircraft Da	mage: Substantial		Aircraft Fire	e: None	e Aircraft				craft Explosion None			
Classificati	ion: U.S. Registered/U	.S. Soil										
- Injury Su	mmary Matrix	Fatal Se	erious Mino	r	None	TOTAL						
First Pi	ilot				1	1						
Second	d Pilot											
Studen	nt Pilot											
Flight I	nstructor											
Check	Pilot											
Flight E	Engineer											
Cabin /	Attendants											
Other Crew												
Passer	ngers											
- TOTAL A			1	1								
Other (	Ground											
- GRANE	O TOTAL -				1	1						

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Investigator-In-Charge (IIC)

Jason A. Ragogna

Additional Persons Participating in This Accident/Incident Investigation:

Donald J Williams Geographic Program Manager Maintenance Federal Aviation Administration Denver, CO 80249